Warringtonfire Frankfurt GmbH Industriepark Höchst, C369 D-65926 Frankfurt am Main Germany



# Test report No. 201185

for applying of a required "Verwendbarkeitsnachweis" issued 27.01.2021

Applicant:

Camira Transport Fabrics Ltd Meltham Mills Meltham Mills Road Meltham West Yorkshire HD9 4AY

Date of order: Date of sampling: 08.12.2020 no official sampling of the specimen by a representative of Warringtonfire Frankfurt GmbH 23.12.2020 07.01.2021 und 20.01.2021

Date of arrival: Date of test:

Order

Testing of the flammability (building class B1) according to DIN 4102-1 (May 1998)

#### Description / designation of the test object

Product name: CITADEL (Collection)

#### Description of the relevant test procedure

DIN 4102 part 1 (Mai 1998)

DIN 4102-16 (January 2021)

This test report does not replace the required "Verwendbarkeitsnachweis". It is only used for issuing the "Verwendbarkeitsnachweis".





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#### 1. Description of the test material

1.1 Details of the customer:

Product name:

CITADEL (Collection)

Sample 1 Colour: Hamiltan Run: 450107 Sample 2 Colour: Hold Run: 463321 Sample 3 Colour: Beacon Run: 461765

Face to be tested:	
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Label on Face

Product description:

Main components:	100% Flame Retardant Polypropylene
Thickness:	1.1 mm
Grossweight:	230 g/m² 334 g/lin.m
Color:	as above
Intended end use of product	Contract Seating

#### 1.2 By Warringtonfire Frankfurt GmbH determined values:

Material:	fabric sample	fabric sample	fabric sample
Colour:	blue	red	beige
thickness:	0,9 mm	0,9 mm	0,9 mm
square weight:	230 g/m²	222 g/m <sup>2</sup>	219 g/m <sup>2</sup>

Testing after storing 14- days under climatic conditions (23°C / 50 % rel. humidity).



## 2. Test results

#### 2.1 Brandschachtprüfung according to DIN 4102-1

Sample A: Material tested in production directionblueSample B: Material tested cross to the production directionblueSample C: Material tested cross to the production directionredSample D: Material tested cross to the production directionred

	Test results of the Brandschacht tests part 1								
line		Measurements test sample							
no.			A	В	С	D			
1	no. test arrangement according to DIN 4102 part 15, table 1		1	1	1	1			
2	flame height max. over lower sample edge	cm	30	30	30	30			
	time <sup>1)</sup>	min : s	00:09	00:07	00:07	00:08			
3	ascertainments on the front side Flaming/glowing time <sup>1)</sup>	min : s	00:03	00:03	00:03	00:03			
4	melting / burning through time <sup>1)</sup>	min : s	00:05	00:05	00:05	00:06			
5	ascertainments on the back side Flaming/glowing time <sup>1)</sup>	min : s	no	no	no	no			
6	discolouring time <sup>1)</sup>	min : s	no	no	no	no			
7 8 9	burning droplets begin <sup>1)</sup> extent occasional dropping of material constant dropping of material	min : s	no	no	no	no			
10 11 12	separating from burning sample parts begin <sup>1)</sup> occasional separating parts constant separating parts	min : s	no	no	no	no			
13	duration of burning on the sieve tray (max.)	min : s	no	no	no	no			
14	influence on the burner flame by dropping of / separating material time <sup>1)</sup>	min : s	no	no	no	no			
15 16	earlier end of test end of the fire scenario on the sample <sup>1)</sup> time of a possible resulted	min : s	no	no	no	no			
	test stop <sup>1)</sup>	min : s							

<sup>1)</sup> time from start of test



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	Test results of t	he Brandschach	t tests part	2				
line		Measurements test sample						
no.			Α	В	Ċ	D		
	flaming after end of test		no	no	no	no		
17	duration		no	no	no	no		
18	number of sample	min : s	no	no	no	no		
19	front side of sample		no	no	no	no		
20 21	backside of sample flame length	cm	no	no	no	no		
	glowing after end of test		/	/	/	/		
22	2 duration 3 number of sample	min . s	no	no	no	no		
23			no	no	no	no		
24	place of occurrence lower sample part		no	no	no	no		
24 25	upper sample part		no	no	no	no		
26	front side of sample		no	no	no	no		
27	backside of sample		no	no	no	no		
	smoke density							
<u>28</u>	<u>&lt; 400 % x min</u>		1	1	0	0		
<u>28</u> 29 30	<u>&gt; 440 % x min</u>							
<u>30</u>	diagram in annex no.		1	2	3	4		
	residual length							
31	single results	cm	66 / 66	66 / 68	67 / 65	67 / 65		
			66 / 66	66 / 67	66 / 65	65 / 65		
32	average of the single results	cm	66	66	65	65		
33	photo of the sample on page		7	7	7	7		
	smoke temperature							
34	max. of the average results	°C	117	118	116	117		
35	time <sup>1)</sup>	min : s	09:56	09:42	09:47	09:58		
36	diagram in annex no.		1	2	3	4		

<sup>1)</sup> time from start of test

Remarks: melting of the samples



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# 2.2 Brandschachtprüfung according to DIN 4102-1

Sample E: Material tested in production direction Sample F: Material tested cross to the production direction

beige beige

colour: light green

	Test results of the Bra	andschach	t tests par	t 1		
line			Measur	ements tes	st sample	
no.			E	F		
1	no. test arrangement according to DIN 4102 part 15, table 1		1	1		
2	flame height max. over lower sample edge	cm	30	30		
	time <sup>1)</sup>	min : s	00:09	00:08		
3	ascertainments on the front side Flaming/glowing time <sup>1)</sup>	min : s	00:03	00:03		
4	melting / burning through time <sup>1)</sup>	min : s	00:06	00:06		
5	ascertainments on the back side Flaming/glowing time <sup>1)</sup>	min : s	no	no		
6	discolouring time <sup>1)</sup>	min : s	no	no		
7 8 9	burning droplets begin <sup>1)</sup> extent occasional dropping of material constant dropping of material	min : s	no	no		
10 11 12	separating from burning sample parts begin <sup>1)</sup> occasional separating parts constant separating parts	min : s	no	no		
13	duration of burning on the sieve tray (max.)	min : s	no	no		
14	influence on the burner flame by dropping of / separating material time <sup>1)</sup>	min : s	no	no		
15	earlier end of test end of the fire scenario on the sample <sup>1)</sup>	min : s	no	no		
16	time of a possible resulted test stop <sup>1</sup> )	min : s				

<sup>1)</sup> time from start of test

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	Test results of t	he Brandschach	t tests part	2				
line			Measurements test sample					
no.			E	F				
	flaming after end of test		no	no				
17	duration		no	no				
18	number of sample	min : s	no	no				
19	front side of sample		no	no				
20	backside of sample		no	no				
21	flame length	cm						
22	glowing after end of test duration	min o	/	/				
22	number of sample	min . s	no	no				
23	place of occurrence		no	no				
24	lower sample part		no	no				
25	upper sample part		no	no				
26	front side of sample		no	no				
27	backside of sample		no	no				
	smoke density			_				
<u>28</u>	<u>&lt; 400 % x min</u>		0	0				
<u>28</u> <u>29</u> <u>30</u>	<u>&gt; 440 % x min</u>							
<u>30</u>	diagram in annex no.		1	1				
	residual length		00 / 00					
31	single results	cm	68 / 66	66 / 66				
			69 / 65	69 / 65				
32	average of the single results	cm	67	66				
33	photo of the sample on page		8	8				
	smoke temperature							
34	max. of the average results	°C	115	116				
35	time <sup>1)</sup>	min : s	09:37	09:10				
36	diagram in annex no.		5	6				

<sup>1)</sup> time from start of test

Remarks: As the residual length was > 45 cm during the Brandschacht test, no further tests were necessary according to DIN 4102-16, melting of the samples



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Appearance of the specimen after the test:

Sample A



Sample B





Sample D





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Appearance of the specimen after the test:

Sample E



Sample F





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# 2.3 Normal flammability test according to DIN 4102-1

Test with edge ignition without deposit Flame application on: lower sample edge Edge ignition

length direction:		colour: blue	•			
Sample-no.		1	2	3	4	5
Time from start of test		I	2	3	4	5
Ignition point [s]		1	1	1	1	1
Reaching the measuring mark within 20 seconds		no	no	no	no	no
Self-extinguishing of the flan	Self-extinguishing of the flame [s]		-	-	-	-
Max. flame height	[mm]	110	110	110	120	90
Time	[s]	20	20	20	20	20
End of afterflaming	[s]	>10	>10	>10	>10	>10
End of afterglowing	[s]	-	-	-	-	-
Flames extinguished after	[s]	25	25	25	25	25
Smoke development		moderate smoke development				
(visual impression)low / moderate / strong			moderale	smoke dev	elopment	
Separating from burning ma	terial	yes	yes	yes	yes	yes
Time	[s]	15	15	14	13	15

Remarks: burning droplets

cross direction:		colour: blue	ł			
Sample-no.		1	2	3	4	5
Time from start of test			2	3	4	5
Ignition point [s]		1	1	1	1	1
Reaching the measuring ma	rk	20	20	20	20	20
within 20 seconds		no	no	no	no	no
Self-extinguishing of the flam	ne [s]	-	-	-	-	-
Max. flame height	[mm]	110	110	130	110	130
Time	[s]	20	20	20	20	20
End of afterflaming	[s]	>10	>10	>10	>10	>10
End of afterglowing	[s]	-	-	-	-	-
Flames extinguished after	[s]	25	25	25	25	25
Smoke development			moderate	omoko dov	alanmant	
(visual impression)low / moderate / strong			moderate	e smoke dev	elopment	
Separating from burning material		yes	yes	yes	yes	yes
Time	[S]	14	13	13	12	12

Remarks: burning droplets

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## 2.4 Normal flammability test according to DIN 4102-1

Test with edge ignition without deposit Flame application on: lower sample edge Edge ignition

length direction: colour: red							
Sample-no.		1	2	3	4	5	
Time from start of test		I	2	3	4	5	
Ignition point [s]		1	1	1	1	1	
Reaching the measuring mark within 20 seconds		no	no	no	no	no	
Self-extinguishing of the flame [s]		18	15	15	15	19	
Max. flame height	[mm]	90	70	80	70	80	
Time	[s]	15	8	8	7	13	
End of afterflaming	[s]	3	-	-	-	4	
End of afterglowing	[s]	-	-	-	-	-	
Flames extinguished after	[s]	-	-	-	-	-	
Smoke development			moderate smoke development				
(visual impression)low / moderate / strong			moderate	smoke dev	elopment		
Separating from burning ma	terial	no	no	no	no	no	
Time	[S]	-	-	-	-	-	

Remarks: none

cross direction:	colour:	red					
Sample-no.		1	2	3	4	5	
Time from start of test		1	2	5	4	5	
Ignition point [s]		1	1	1	1	1	
Reaching the measuring mark within 20 seconds		no	no	no	no	no	
Self-extinguishing of the flam	ne [s]	8	13	-	22	15	
Max. flame height	[mm]	60	80	110	100	90	
Time	[s]	5	8	20	20	10	
End of afterflaming	[S]	-	-	>10	7	-	
End of afterglowing	[s]	-	-	-	-	-	
Flames extinguished after	[S]	-	-	25	-	-	
Smoke development			moderate smoke development				
(visual impression)low / moderate / strong			moderate	smoke dev	elopment		
Separating from burning material		no	no	no	no	no	
Time	[S]	-	-	-	-	-	

Remarks: none

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## 2.5 Normal flammability test according to DIN 4102-1

Test with edge ignition without deposit Flame application on: lower sample edge Edge ignition

length direction:	colour:	beige				
Sample-no.		1	0	3	4	5
Time from start of test		I	2	5	4	5
Ignition point [s]		1	1	1	1	1
Reaching the measuring mark within 20 seconds		no	no	no	no	no
Self-extinguishing of the flan	Self-extinguishing of the flame [s]		15	12	8	9
Max. flame height	[mm]	80	80	60	50	60
Time	[s]	8	10	7	6	6
End of afterflaming	[S]	-	-	-	-	-
End of afterglowing	[s]	-	-	-	-	-
Flames extinguished after	[s]	-	-	-	-	-
Smoke development		moderate smoke development				
(visual impression)low / moderate / strong			moderate	smoke dev	elopment	
Separating from burning ma	terial	no	no	no	no	no
Time	[s]	-	-	-	-	-

Remarks: Burning droplets

cross direction: colour: beige						
Sample-no.		1	2	3	4	5
Time from start of test						
Ignition point [s]		1	1	1	1	1
Reaching the measuring mark within 20 seconds		no	no	no	no	no
Self-extinguishing of the flame [s]		13	6	7	9	6
Max. flame height	[mm]	70	60	60	70	50
Time	[s]	7	5	5	7	5
End of afterflaming	[S]	-	-	-	-	-
End of afterglowing	[S]	-	-	-	-	-
Flames extinguished after	[S]	-	-	-	-	-
Smoke development		moderate smoke development				
(visual impression)low / moderate / strong						
Separating from burning material		no	no	no	no	no
Time	[s]	-	-	-	-	-

Remarks: none



#### Appearance of the sample after the small burner test:









#### Assessment

The material described in chapter one fulfils the requirements of the building class B2 according to DIN 4102-1 (Mai 1998).

The determined test results show that the material also fulfils the requirements

#### of the building class B1 with burning droplets

according to DIN 4102-1 (Mai 1998).

#### Special note

The fire test result is only valid for the material described in chapter one in the tested colours, square weights and thicknesses.

The test was carried out in free hanging configuration.

The distance to another plane material must be more or equal then 40 mm.

According to DIN 4102-16 Section 5.2, the test result includes all colour settings.

The material wasn't tested after an outside storage.

In combination with other materials (for example coatings, deposits) the burning behaviour could be influenced unfavourable so that the classification above is not valid any longer. According to DIN 4102-1 the burning behaviour in combination with other materials has to be tested separately.

This test report does not replace the required "Verwendbarkeitsnachweis". It is only used for issuing the "Verwendbarkeitsnachweis".

Frankfurt, the 27th January 2021

H. Anders Tester in Charge

P. Scheinkönig Prüfstellenleiter Bau-PVO



This Test report is valid until 06.01.2026

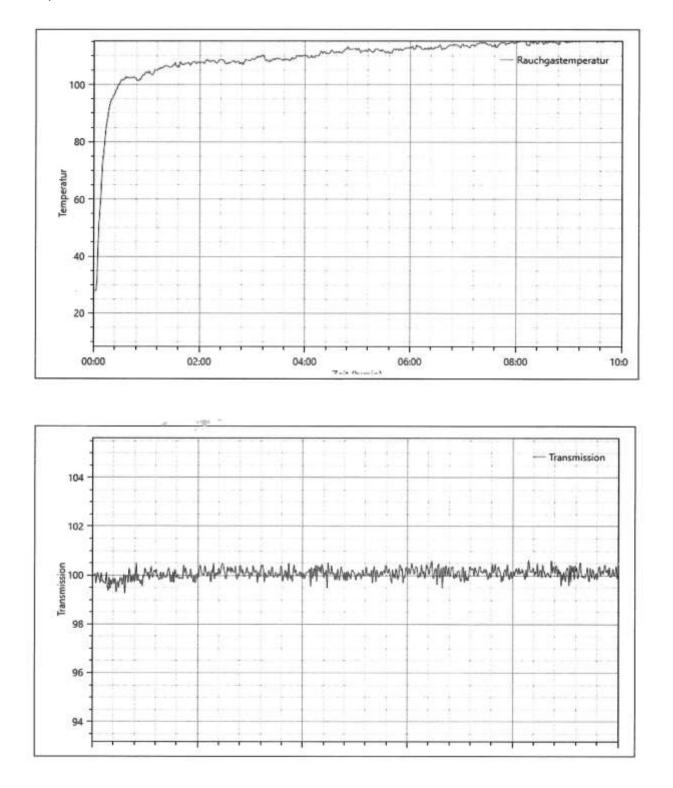
The results of the tests relate only to the behaviour of the test specimen which is designated on the top.

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# Annex 1 to the Test report No. 201185 issued 27.01.2021

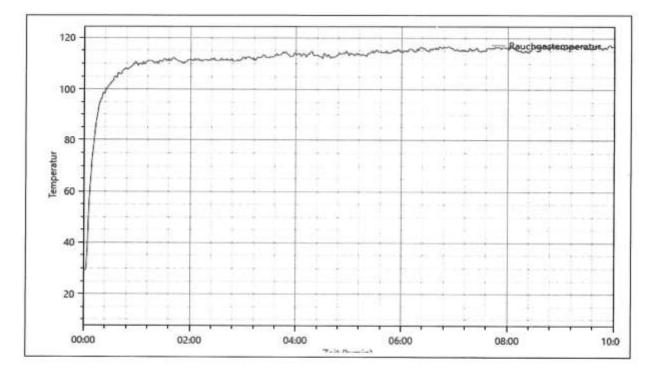
# Sample A:

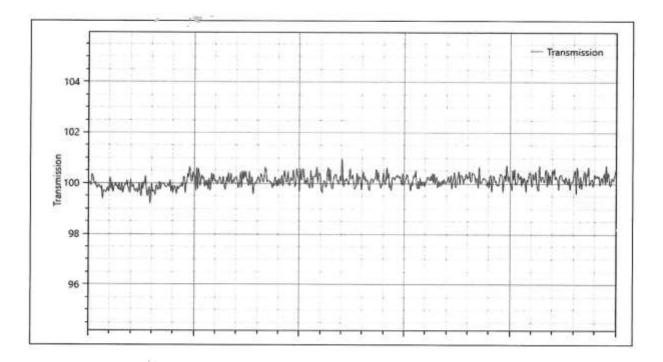




# Annex 2 to the Test report No. 201185 issued 27.01.2021

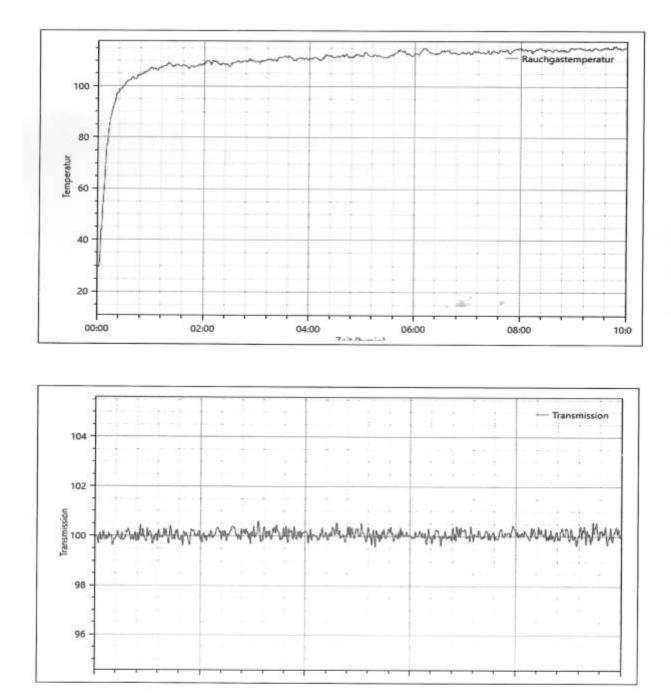
Sample B:







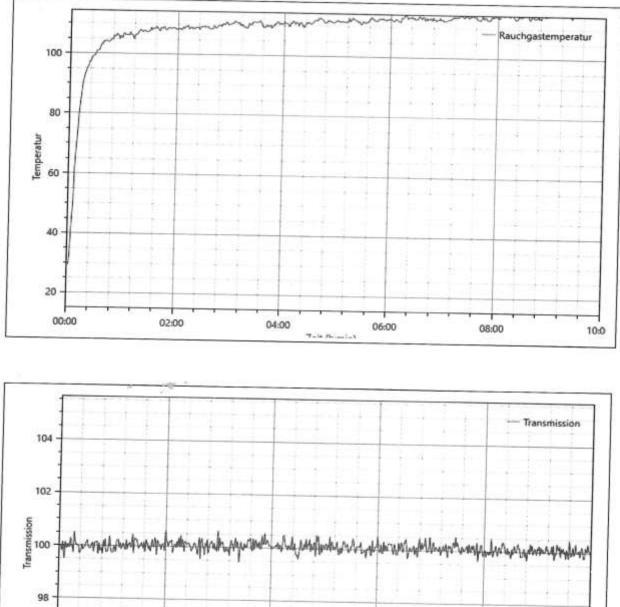
# Annex 3 to the Test report No. 201185 issued 27.01.2021



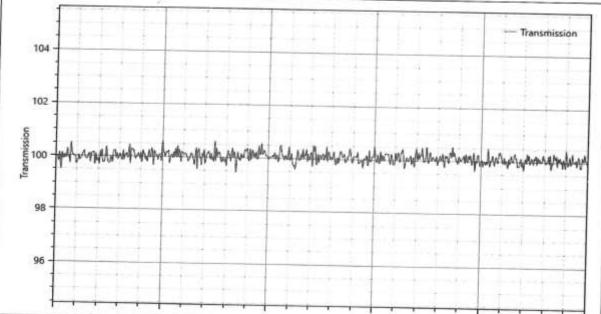
# Sample C:



#### Annex 4 to the Test report No. 201185 issued 27.01.2021

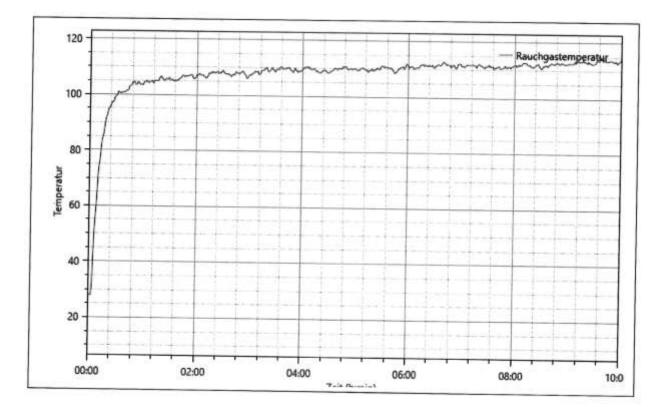


# Sample D:

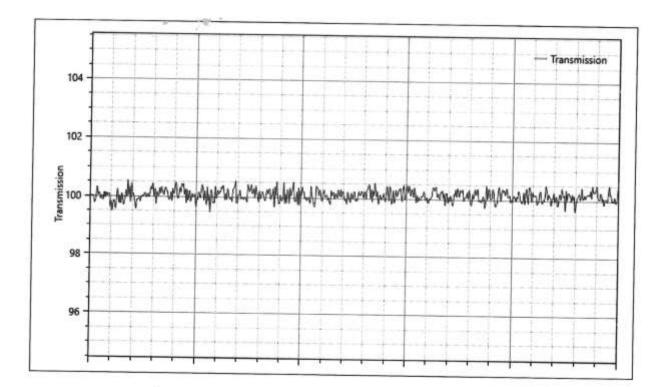




# Annex 5 to the Test report No. 201185 issued 27.01.2021

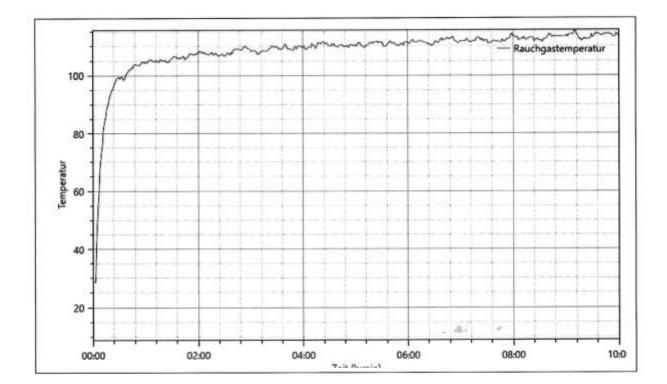


## Sample E:





# Annex 6 to the Test report No. 201185 issued 27.01.2021



#### Sample F:

